

Chapter 1 Review Quiz

7. A function has the following domain and range:

1

$$\text{Domain} = \{t \in \mathbb{R} \mid -3 \leq t \leq 5\}$$

$$\text{Range} = \{g(t) \in \mathbb{R} \mid 0 \leq g(t) \leq 10\}$$

- Draw a sketch of this function if it is linear.
- Draw a sketch of this function if it is quadratic.

Sep 16-7:43 AM

Chapter 1 Review Quiz

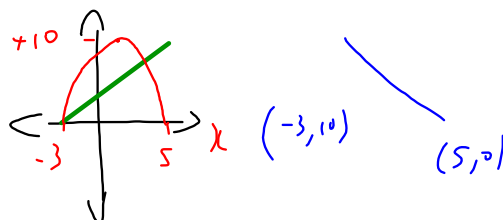
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4. A stone is thrown from a bridge into a river. The height of the stone above the river at any time after it is released is modelled by the function $h(t) = 72 - 4.9t^2$. The height of the stone, $h(t)$, is measured in centimetres and time, t , is measured in seconds.

- Evaluate $h(0)$. What does it represent?
- Evaluate $h(2.5)$. What does it represent?
- If $h(3) = 27.9$, explain what you know about the stone's position.

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$$h(0) = 72 - 4.9(0)^2$$

Height of the bridge is 72 cm.

$$h(2.5) = 72 - 4.9(2.5)^2$$

$$h(2.5) = 72 - 4.9(6.25)$$

$$h(2.5) = 72 - 30.625$$

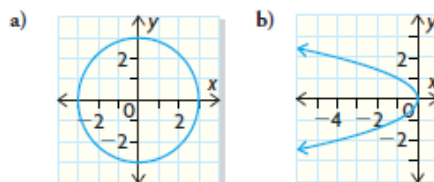
$$h(2.5) = 41.375$$

At 2.5s the stone is 41.375 cm above the water.

At 3s the stone is 27.9 cm above the water.

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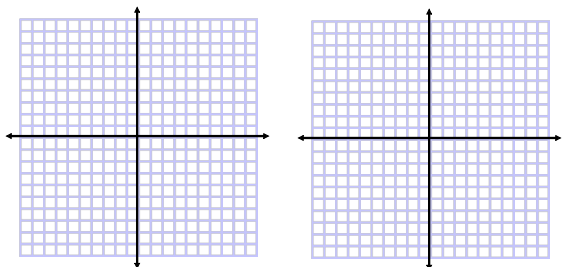
3. Given the following, state the domain and range and whether the relation is a function.



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7. Describe the transformations applied to the graph of $y = x^2$ to obtain a graph of each quadratic relation. Sketch the graph by hand. Start with the graph of $y = x^2$ and use the appropriate transformations.

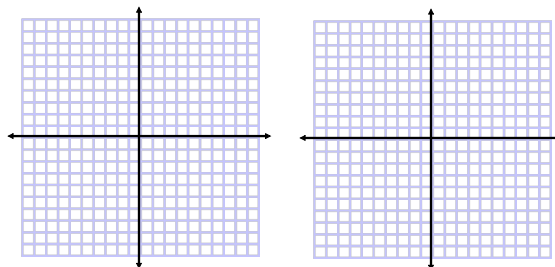
- a) $y = -4(x-5)^2 + 3$ d) $y = -\frac{1}{2}(x-1)^2 - 5$
 b) $y = 2(x+1)^2 - 8$ e) $y = -(x-3)^2 + 2$
 c) $y = \frac{2}{3}(x+2)^2 + 1$ f) $y = 2(x+1)^2 + 4$



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$$\begin{aligned}
 f(x) &= 3x^2 - 2x + 6 \\
 (x-1) \\
 f(x-1) &= 3(x-1)^2 - 2(x-1) + 6 \\
 f(x-1) &= 3(x-1)^2 - 2x + 2 + 6 \\
 f(x-1) &= 3(x-1)(x-1) - 2x + 8 \\
 f(x-1) &= 3[x^2 - 2x + 1] - 2x + 8 \\
 f(x-1) &= 3x^2 - 6x + 3 - 2x + 8 \\
 f(x-1) &= 3x^2 - 8x + 11
 \end{aligned}$$

Sep 19-9:19 AM